

2103000205021052
EXAMINATION FEBRUARY-MARCH 2024
BACHELOR OF SCIENCE (FIFTH SEMESTER)
BIO SCIENCE (MICROBIOLOGY) PAPER - VII
BS-502-BACTERIAL GENETICS & BIOTECHNOLOGY
LEVEL 2

[Time: As Per Schedule]

[Max. Marks: 50]

Instructions:

1. Fill up strictly the following details on your answer book

- a. Name of the Examination: **BACHELOR OF SCIENCE (FIFTH SEMESTER)**
 - b. Name of the Subject: **BIO SCIENCE (MICROBIOLOGY) PAPER - VII BS-502-BACTERIAL GENETICS & BIOTECHNOLOGY LEVEL 2**
 - c. Subject Code No: **2103000205021052**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.

Seat No:

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Student's Signature

Q.1 Multiple choices Questions. (MCQs)

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1. Initiation of protein synthesis begins with binding of
 - a. 40S ribosomal unit on mRNA
 - b. 60S ribosomal unit
 - c. Charging of tRNA with specific amino acid
 - d. Attachment of aminoacyl tRNA on mRNA

2. Releasing factors are required for
 - a. Elongation
 - b. Termination
 - c. Initiation
 - d. Activation

3. Which of the following is a type of bacterial conjugation?
 - a. $F^+ \times F^-$ Conjugation
 - b. Hfr Conjugation
 - c. F' Conjugation
 - d. All

4. A pieces of bacterial DNA that can be transfer to another bacterium by virus is called.
- | | |
|-------------------|-----------------|
| a. Transformation | b. Transduction |
| c. Conjugation | d. None |
5. rDNA can be inserted into host by _____
- | | |
|--------------------|-------------|
| a. Electroporation | b. Gene gun |
| c. Microinjection | d. All |
6. Which of the following is an example of phage vector?
- | | |
|-----------|-----------|
| a. pBR322 | b. pJC720 |
| c. pYAC | d.M13mp18 |
7. In addition to Taq polymerase, polymerase chain reaction requires all of the following except.
- | | |
|-------------------|------------|
| a. A template DNA | b. DNTPs |
| c. Primers | d. Primase |
8. Western blotting is useful to identify _____
- | | |
|---------------------|-----------------|
| a. RNA sequence | b. DNA sequence |
| c. Protein sequence | d. All |

Q.2 (A) Give Specific answer

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1. State the enzymes involved in translation.
2. Define Chimeric molecule
3. Name the scientists involved with bacterial conjugation process.
4. Enlist the types of blotting techniques.

(B) Write short notes on (any two)

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1. Restriction enzymes
2. Abortive transduction
3. DNA hybridization

Q.3 Answer the following question

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1. Discuss Homologous recombination vs Site specific recombination
2. Describe Transposable genetic elements in detail.

OR

1. Explain Translation in eukaryotes in detail.

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Q.4 Explain Translation in eukaryotes in detail.

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1. Application of rDNA technology.
2. Polymerase chain reaction.
3. Explain in detail Blue White Screening.
